

Smart Grid - Frequently Asked Questions

Q What is Smart Grid?

- A** Smart Grid is an open digital infrastructure for managing electric power networks. Smart Grid is multi-vendor capable and provides:
- Two-way communication between Concord Light and the electric system and our customers
 - Advanced sensors & controls
 - Expansion capabilities for future applications

Q What will Concord Light do with a Smart Grid?

- A** Concord Light intends to:
- Manage peak energy demand
 - Big component of our costs
 - Big sources of savings
 - Help residents improve their own energy conservation and usage
 - Improve monitoring and control of Concord's local electric grid
 - Replace the existing QEI system serving residential hot water heaters and ETS users which is obsolete and parts are no longer available

Q How can a customer use or take advantage of Smart Grid?

- A** Smart Grid will allow customers to do some control functions presently and has the ability to allow many more functions to be added in the future. We now have meters that can be read remotely from hardware installed in a van that drives slowly down the street. No longer does a meter reader have to visit each meter to get the reading.

However, our current meters are capable only of one-way communication – from the meter to the van. By adding a small additional circuit board to the existing meter, our Smart Grid control system at the main office will be able to communicate with the meter for many functions other than the meter reading.

Q What are these functions?

- A** The future will bring many other emerging home and business technologies and functions. These functions might include real time metering where
- the customer could adjust consumption in response to knowing the price of electricity on the wholesale market
 - a smart thermostat might be used to remotely adjust central air conditioning just a few degrees to help shave system demand
 - water heating and electro-thermal storage heating systems are monitored and adjusted to make sure they stay off-peak
 - plug-in hybrid electric vehicles can be controlled, and
 - integration with solar and wind generation at a residence is possible.

Q How will a Smart Grid help Concord Light with its operations?

A Smart Grid will allow us to

- have automatic detection of faults and problems
- provide the ability for system control and data acquisition and
- help us to manage our power factor, one measure of system losses.

Q How will those things help Concord Light?

A Automatic detection of faults and outages will help our line division locate and repair more quickly the problem causing the outage. Being able to quickly know where the problem exists would allow our field personnel to shorten the length of the outage. Also, helping to manage our system power factor will reduce any future penalty charges from the Independent System Operator for New England (ISO-NE).

Q Are there other ways in which the Smart Grid will help Concord Light?

A To the extent that additional services agreed to by customers allows us to reduce our peak demand, we will save money in transmission and forward capacity charges. A reduced demand will also help us to defer having to expand our main substation. In addition, it can help customers become more energy conscious, thus conserving energy and reducing our carbon footprint.

Q It has been suggested that you do just the twenty-five large customers and Town Buildings. Has this been considered?

A Yes, it has. However, after performing an analysis, we learned that deploying a Smart Grid system to just those locations would cost almost one half of deploying it for the entire Town. This is because these customers exist from one end of the town to the other.

While we will certainly work with these customers as well as the Town Buildings, many of these installations already have energy management tools available to them. We believe that the real opportunity to make further impact on the Town's energy use is with the residential and small commercial users.